**Kindly add the following new claims 20-75.**

20. (New) A method of measuring a thickness of a film on a substrate, said method comprising:

supplying a jet of light-transmitting liquid towards the film in a supply direction;

emitting light through the light-transmitting liquid towards the film;

recovering the light-transmitting liquid supplied to the film, wherein the light-transmitting liquid flows in a recovery direction during said recovering, the recovery direction being parallel to the supply direction;

receiving the light reflected from a surface of the film through the light-transmitting liquid; and

measuring the thickness of the film based on the light reflected from the film.

21. (New) The method of claim 20, wherein the supply direction is substantially perpendicular to the surface of the film.

22. (New) The method of claim 20, wherein said emitting light and said receiving light comprise emitting light from and receiving light into at least one optical fiber arranged within the jet of light-transmitting liquid.

23. (New) The method of claim 20, wherein the light-transmitting liquid flowing in the supply direction is adjacent to the light-transmitting liquid flowing in the recovery direction such that the light-transmitting liquid being supplied and the light-transmitting liquid being recovered are separated by only a wall.

24. (New) A method of measuring a thickness of a film on a substrate, said method comprising:

supplying a jet of light-transmitting liquid through a nozzle towards the film;

emitting light from at least one optical fiber arranged within the nozzle so that the light travels through the light-transmitting liquid towards the film and is reflected by a surface of the film, wherein a distal end of the nozzle is closer to the film than a distal end of the at least one optical fiber;

receiving the light reflected from the film and passing through the light-transmitting liquid into the distal end of the at least one optical fiber arranged within the nozzle; and

measuring the thickness of the film based on the light reflected by the film.

25. (New) The method of claim 24, wherein the nozzle is positioned so as to form a gap between the distal end of the nozzle and the surface of the film.

26. (New) The method of claim 24, wherein the at least one optical fiber comprises a light-emitting optical fiber having a distal end for emitting the light, and comprises a light-receiving optical fiber having a distal end for receiving the light, wherein the distal end of the nozzle is closer to the film than the distal end of each of the light-emitting optical fiber and the light-receiving optical fiber.

27. (New) The method of claim 24, wherein the at least one optical fiber comprises a single light-emitting/light-receiving optical fiber having a distal end for emitting and receiving the light, wherein the distal end of the nozzle is closer to the film than the distal end of the light-emitting/light-receiving optical fiber.

28. (New) The method of claim 24, wherein an inner surface of the nozzle has a mirror finish.

29. (New) A method of measuring a thickness of a film on a substrate, said method comprising:

supplying a jet of light-transmitting liquid through a nozzle towards the film, the nozzle being positioned so as to form a gap between a distal end of the nozzle and a plane of a polishing surface for polishing the film;

emitting light from at least one optical fiber arranged within the nozzle so that the light travels through the light-transmitting liquid towards the film and is reflected by the surface of the film;

receiving the light reflected from the film and passing through the light-transmitting liquid into the at least one optical fiber arranged within the nozzle; and

measuring the thickness of the film based on the light reflected by the film.

30. (New) The method of claim 29, wherein said supplying of the light-transmitting liquid comprises supplying the light-transmitting liquid in a supply direction, further comprising recovering the light-transmitting liquid such that the light-transmitting liquid flows in a recovery direction during said recovering, the recovery direction being substantially parallel to the supply direction.

31. (New) The method of claim 29, wherein the at least one optical fiber comprises a light-emitting optical fiber for emitting the light, and comprises a light-receiving optical fiber for receiving the light.

32. (New) The method of claim 29, wherein the at least one optical fiber comprises a single light-emitting/light-receiving optical fiber for emitting and receiving the light.

33. (New) The method of claim 29, wherein an inner surface of the nozzle has a mirror finish.

34. (New) An apparatus for measuring a thickness of a film on a substrate, said apparatus comprising:

a first conduit for supplying a jet of light-transmitting liquid from a distal end thereof towards the film in a supply direction so that the light-transmitting liquid contacts a surface of the film;

a second conduit for recovering the light-transmitting liquid, the second conduit being arranged so that the light-transmitting liquid flows in a recovery direction, said recovery direction being parallel to said supply direction;

a light emitter for emitting light towards the film through the light-transmitting liquid; and

a light receiver for receiving the light reflected from the surface of the film through the light-transmitting liquid to enable measurement of the thickness of the film based on the light reflected from the surface of the film.

35. (New) The apparatus of claim 34, wherein said first conduit is arranged such that the supply direction is substantially perpendicular to the surface of the film.

36. (New) The apparatus of claim 34, wherein said light emitter comprises a light-emitting optical fiber having a distal end arranged within said first conduit so as to direct the light towards the film through the light-transmitting liquid.

37. (New) The apparatus of claim 34, wherein said light receiver comprises a light-receiving optical fiber having a distal end arranged within said first conduit so as to receive the light reflected from the surface of the film and passing through the light-transmitting liquid.

38. (New) The apparatus of claim 36, wherein said light emitter comprises a light-emitting optical fiber having a distal end arranged within said first conduit so as to direct the light towards the film through the light-transmitting liquid.

39. (New) The apparatus of claim 34, wherein said light emitter and said light receiver comprise a single light-emitting/light-transmitting optical fiber having a distal end arranged within

said first conduit so as to emit light toward the film and so as to receive the light reflected from the surface of the film.

40. (New) The apparatus of claim 34, wherein said first conduit is arranged within said second conduit such that the light-transmitting liquid flowing in the supply direction through said first conduit is separated from the light-transmitting liquid flowing in the recovery direction through said second conduit by a wall of said first conduit.

41. (New) The apparatus of claim 34, wherein an inner surface of said first conduit has a mirror finish

42. (New) An apparatus for measuring a thickness of a film on a substrate, said apparatus comprising:

a conduit for supplying a jet of light-transmitting liquid from a distal end thereof towards the film, and

at least one optical fiber arranged within said conduit for emitting light towards the film through the light-transmitting liquid, and for receiving the light reflected from a surface of the film and passing through the light-transmitting liquid, wherein a distal end of said conduit is closer to the surface of the film than a distal end of said at least one optical fiber, and wherein said at least one optical fiber is connected to a component for measuring a thickness of the film based on the light reflected from the surface of the film.

43. (New) The apparatus of claim 42, wherein said conduit is arranged so as to form a gap between said distal end of said conduit and a plane of the surface of the film

44. (New) The apparatus of claim 42, wherein said at least one optical fiber comprises a light-emitting optical fiber having a distal end arranged within said conduit so as to direct the light towards the film through the light-transmitting liquid, and comprises a light-receiving optical fiber

having a distal end arranged within said conduit so as to receive the light reflected from the surface of the film and passing through the light-transmitting liquid, said distal end of said conduit being closer to the film than said distal end of each of said light-emitting optical fiber and said light-receiving optical fiber.

45. (New) The apparatus of claim 42, wherein said at least one optical fiber comprises a single light-emitting/light-transmitting optical fiber having a distal end arranged within said conduit so as to emit light toward the film and so as to receive the light reflected from the surface of the film, said distal end of said conduit being closer to the film than said distal end of said light-emitting/light-transmitting optical fiber.

46. (New) The apparatus of claim 42, wherein said conduit comprises a first conduit for supplying the light-transmitting liquid, further comprising a second conduit for recovering the light-transmitting liquid, said first conduit being arranged within said second conduit such that the light-transmitting liquid flowing through said first conduit is separated from the light-transmitting liquid flowing through said second conduit by a wall of said first conduit.

47. (New) The apparatus of claim 42, wherein an inner surface of said conduit has a mirror finish

48. (New) An apparatus for measuring a thickness of a film on a substrate, said apparatus comprising:

a polishing surface for polishing a surface of the film;

a conduit for supplying a jet of light-transmitting liquid from a distal end thereof towards the film, said conduit being arranged so as to form a gap between said distal end of said conduit and a plane of said polishing surface; and

at least one optical fiber arranged within said conduit for emitting light towards the film through the light-transmitting liquid, and for receiving the light reflected from a surface of the film

and passing through the light-transmitting liquid, wherein said at least one optical fiber is connected to a component for measuring a thickness of the film based on the light reflected from the surface of the film.

49. (New) The apparatus of claim 48, wherein said at least one optical fiber comprises a light-emitting optical fiber having a distal end arranged within said conduit so as to direct the light towards the film through the light-transmitting liquid, and comprises a light-receiving optical fiber having a distal end arranged within said conduit so as to receive the light reflected from the surface of the film and passing through the light-transmitting liquid, said distal end of said conduit being closer to the film than said distal end of each of said light-emitting optical fiber and said light-receiving optical fiber.

50. (New) The apparatus of claim 48, wherein said at least one optical fiber comprises a single light-emitting/light-transmitting optical fiber having a distal end arranged within said conduit so as to emit light toward the film and so as to receive the light reflected from the surface of the film, said distal end of said conduit being closer to the film than said distal end of said light-emitting/light-transmitting optical fiber.

51. (New) The apparatus of claim 48, wherein said conduit comprises a first conduit for supplying the light-transmitting liquid, further comprising a second conduit for recovering the light-transmitting liquid, said first conduit being arranged within said second conduit such that the light-transmitting liquid flowing through said first conduit is separated from the light-transmitting liquid flowing through said second conduit by a wall of said first conduit.

52. (New) The apparatus of claim 48, wherein an inner surface of said conduit has a mirror finish.

53. (New) An apparatus for treating a substrate having a film on a surface of the substrate, said apparatus comprising:

a holder for holding the substrate; and

a film thickness measurement device for measuring a thickness of the film formed on the substrate, said film thickness measurement device comprising:

a first conduit for supplying a jet of light-transmitting liquid from a distal end thereof towards the film in a supply direction so that the light-transmitting liquid contacts a surface of the film;

a second conduit for recovering the light-transmitting liquid after the light-transmitting liquid contacts the surface of the film, the second conduit being arranged so that the light-transmitting liquid flows in a recovery direction, said recovery direction being parallel to said supply direction;

a light emitter for emitting light towards the film through the light-transmitting liquid; and

a light receiver for receiving the light reflected from the surface of the film through the light-transmitting liquid to enable measurement of the thickness of the film based on the light reflected from the surface of the film.

54. (New) The apparatus of claim 53, wherein said first conduit is arranged such that the supply direction is substantially perpendicular to the surface of the film.

55. (New) The apparatus of claim 53, wherein said light emitter comprises a light-emitting optical fiber having a distal end arranged within said first conduit so as to direct the light towards the film through the light-transmitting liquid.

56. (New) The apparatus of claim 53, wherein said light receiver comprises a light-receiving optical fiber having a distal end arranged within said first conduit so as to receive the light reflected from the surface of the film and passing through the light-transmitting liquid.

57. (New) The apparatus of claim 56, wherein said light emitter comprises a light-emitting optical fiber having a distal end arranged within said first conduit so as to direct the light towards the film through the light-transmitting liquid.

58. (New) The apparatus of claim 53, wherein said light emitter and said light receiver comprise a single light-emitting/light-transmitting optical fiber having a distal end arranged within said first conduit so as to emit light toward the film and so as to receive the light reflected from the surface of the film.

59. (New) The apparatus of claim 53, wherein said first conduit is arranged within said second conduit such that the light-transmitting liquid flowing in the supply direction through said first conduit is separated from the light-transmitting liquid flowing in the recovery direction through said second conduit by a wall of said first conduit.

60. (New) The apparatus of claim 53, further comprising a turntable having a polishing surface, said holder being operable to hold the substrate in contact with said polishing surface to polish the substrate, said first conduit and said second conduit being arranged to extend through said turntable, said second conduit having an opening at said polishing surface such that said opening is closed by engagement of the substrate and said polishing surface, said first conduit being arranged so as to form a gap between said distal end of said first conduit and a plane of said polishing surface.

61. (New) The apparatus of claim 60, wherein said first conduit and said second conduit comprise one of a plurality of sets of first conduits and second conduits.

62. (New) The apparatus of claim 53, wherein an inner surface of said first conduit has a mirror finish.

63. (New) An apparatus for treating a substrate having a film on a surface of the substrate, said apparatus comprising:

a holder for holding the substrate; and

a film thickness measurement device for measuring a thickness of the film formed on the substrate, said film thickness measurement device comprising:

a conduit for supplying a jet of light-transmitting liquid from a distal end thereof towards the film; and

at least one optical fiber arranged within said conduit for emitting light towards the film through the light-transmitting liquid, and for receiving the light reflected from a surface of the film and passing through the light-transmitting liquid, wherein a distal end of said conduit is closer to the surface of the film than a distal end of said at least one optical fiber, and wherein said at least one optical fiber is connected to a component for measuring a thickness of the film based on the light reflected from the surface of the film.

64. (New) The apparatus of claim 63, wherein said conduit is arranged so as to form a gap between said distal end of said conduit and a plane of the surface of the film.

65. (New) The apparatus of claim 63, wherein said at least one optical fiber comprises a light-emitting optical fiber having a distal end arranged within said conduit so as to direct the light towards the film through the light-transmitting liquid, and comprises a light-receiving optical fiber having a distal end arranged within said conduit so as to receive the light reflected from the surface of the film and passing through the light-transmitting liquid, said distal end of said conduit being closer to the film than said distal end of each of said light-emitting optical fiber and said light-receiving optical fiber.

66. (New) The apparatus of claim 63, wherein said at least one optical fiber comprises a single light-emitting/light-transmitting optical fiber having a distal end arranged within said conduit so as to emit light toward the film and so as to receive the light reflected from the surface

of the film, said distal end of said conduit being closer to the film than said distal end of said light-emitting/light-transmitting optical fiber.

67. (New) The apparatus of claim 63, wherein said conduit comprises a first conduit for supplying the light-transmitting liquid, further comprising a second conduit for recovering the light-transmitting liquid, said first conduit being arranged within said second conduit such that the light-transmitting liquid flowing through said first conduit is separated from the light-transmitting liquid flowing through said second conduit by only an outer wall of said first conduit.

68. (New) The apparatus of claim 63, further comprising a turntable having a polishing surface, said holder being operable to hold the substrate in contact with said polishing surface to polish the substrate, said conduit being arranged to extend through said turntable.

69. (New) The apparatus of claim 63, wherein an inner surface of said conduit has a mirror finish.

70. (New) An apparatus for treating a substrate having a film on a surface of the substrate, said apparatus comprising:

a polishing surface for polishing a surface of the film formed on the substrate;

a holder for holding the substrate; and

a film thickness measurement device for measuring a thickness of the film formed on the substrate, said film thickness measurement device comprising:

a conduit for supplying a jet of light-transmitting liquid from a distal end thereof towards the film, said conduit being arranged so as to form a gap between said distal end of said conduit and a plane of said polishing surface; and

at least one optical fiber arranged within said conduit for emitting light towards the film through the light-transmitting liquid, and for receiving the light reflected from a surface of the film and passing through the light-transmitting liquid, wherein said at least one optical fiber is

connected to a component for measuring a thickness of the film based on the light reflected from the surface of the film.

71. (New) The apparatus of claim 70, wherein said at least one optical fiber comprises a light-emitting optical fiber having a distal end arranged within said conduit so as to direct the light towards the film through the light-transmitting liquid, and comprises a light-receiving optical fiber having a distal end arranged within said conduit so as to receive the light reflected from the surface of the film and passing through the light-transmitting liquid, said distal end of said conduit being closer to the film than said distal end of each of said light-emitting optical fiber and said light-receiving optical fiber.

72. (New) The apparatus of claim 70, wherein said at least one optical fiber comprises a single light-emitting/light-transmitting optical fiber having a distal end arranged within said conduit so as to emit light toward the film and so as to receive the light reflected from the surface of the film, said distal end of said conduit being closer to the film than said distal end of said light-emitting/light-transmitting optical fiber.

73. (New) The apparatus of claim 70, wherein said conduit comprises a first conduit for supplying the light-transmitting liquid, further comprising a second conduit for recovering the light-transmitting liquid, said first conduit being arranged within said second conduit such that the light-transmitting liquid flowing through said first conduit is separated from the light-transmitting liquid flowing through said second conduit by a wall of said first conduit.

74. (New) The apparatus of claim 70, further comprising a turntable having said polishing surface formed thereon, said holder being operable to hold the substrate in contact with said polishing surface to polish the substrate, said conduit being arranged to extend through said turntable.

75. (New) The apparatus of claim 70, wherein an inner surface of said conduit has a mirror finish.